AIRS Near Real-Time IEEE Paper Overview

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1 Introduction

- AIRS will improve weather forecasting
- Most centers are assimilating radiances
- Assimilating 20 or so channels and not accounting for retrieval correlated errors may be attractive -- but now there are 2000 channels --- less attractive
- Retrievals will be used by DAO
- AMSU >> major impact in fcst skill, but not due to vertical resolution but due to quantity.
- HIRS -- only 10% is assimilated
- AIRS will have much better vertical resolution but still have cloud problem
- Encourage the use of cloud cleared radiances – or else

2 AIRS NRT Products

- Volume is large for NWP centers
- Thin the radiance data
- Full resolution retrievals
- Describe the different datasets

3 Simulations

- Few words -- refer to Fishbien and Hannon

4 PCS/Regr. Algorithms

- Principal component analysis - data compression, quality control, noise filtering, noise estimation, and regression.

- Describe methodology, and how we generate coefficients (can be based on simulated or measured data) -- show results – compare with ATOVS

- Surface emissivity regression

- Local limb adjustment

5 Updating Coefficients

- Strategy for updating coefficients
- Generate coefficients on daily basis – only for monitoring -- compare results based on static set vs daily set.
- Outliers are thrown into static sets – coefficients regenerated.. Experience with simulated data shows that coefficients are updated after a few weeks, then a couple of months --- then no more updates after six months

6 Clear tests

- Refer to VIS/NIR paper
- Why we want clear tests
- Clear tests over ocean -- results
- How thresholds are determined
- Clear test over land